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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,608	04/02/2004	Tadashi Masuda	05677/0201108-US0	9813
7278	7590	09/14/2006	EXAMINER	
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			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/816,608	Applicant(s) MASUDA, TADASHI	
	Examiner Powen Ru	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/2/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the initial office action based on the application filed on 4/2/2004. Claims 1-6 are currently pending and have been considered below.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "dividing network" (Claims 1 and 6) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

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corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 1, 5, 9, 10, 21, 22, 24, 25, 28, 31, 32, 34, 36, 44, 46, 48-51, 82, and 91. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to as failing to comply with 37 CFR 1.72(a), because it exceeds 150 words in length (211 words). The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the

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range of 50 to 150 words. The applicant may remove the reference numbers to reduce word count. Correction is required.

4. The examiner notices that there are numerous errors in the specification. For example, "corn-type" should be "cone-type" (e.g., page 11 line 1) throughout the document. But it must be remembered that an examination is not made for the purpose of securing grammatical perfection. The applicant should revise the specification carefully.

5. The disclosure is objected to because of the following informalities: "resonant chamber73" should be "resonant chamber 73". Appropriate correction is required.

Claim Objections

6. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. The Office considers any claim which refers to another claim as being a dependent claim. Claim 6 refers to Claim 1 and, thus, is considered to depend thereon. However, Claim 1 is a apparatus claim which consists of a cabinet, a woofer, a baffle plate, and a resonant chamber. Claim 6, a system claim does not include any limitations which add, delete or change any of these elements. Therefore, Claim 6 fails to further limit its parent claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The applicant

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may recite the features of the previous claim and make Claim 6 an independent claim to overcome this objection.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear whether "a dividing network" in Claim 6 (line 8) is the same as that of the previous claim (Claim 1 line 12). The applicant may remove "a bass loudspeaker apparatus of claim 1", recite the features of Claim 1 in the end of Claim 6, but change "a dividing network" to "the dividing network" in order to overcome the rejection. The examiner will consider that they represent the same element in this action.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (6,062,338) in view of Tanaka et al. (5,781,642).

Claim 1: Thompson discloses a bass loudspeaker apparatus (e.g., bass unit, col 2 lines 3-10), comprising a cabinet (enclosure 10, col 3 lines 5-10) having an inner space (rear chamber, col 3 lines 15-20) and a sound emission opening in a front section (Front chamber sized opening 24, col 3 lines 5-10); a cone-type woofer (speaker(s) 22, col 3 lines 30-35) disposed within the cabinet (see Fig. 2); a baffle plate (inner panel 14, col 3 lines 10-15) having a woofer mounting section and vertically disposed in the inner space so as to face the sound emission opening (see Fig. 2); a resonant chamber (front chamber, col 3 lines 10-13) defined in front of the baffle plate for communicating with the sound emission opening; the resonant chamber and the sound emission opening being respectively designed such that resonance occurs between an air mass (e.g., the air the speaker can displace, col 2 lines 43-45) around the periphery of the sound emission opening and an air spring (e.g., total volume of air in cabinet, col 2 lines 40-43) within the resonant chamber; but does not specifically disclose a predetermined frequency range of 150 through 400 Hz and a dividing network. However, Tanaka et al. discloses a resonance frequency range of 150 through 400 Hz (e.g., curve F, Fig. 8) and a dividing network (network circuit 14, col 13 lines 34-36) connected to the bass loudspeaker apparatus (first speaker 11, col 3 lines 37-39) for canceling out the intension of sound pressure produced by the resonance at the frequency range of the resonance (e.g., high range signal attenuating means, col 13 lines 36-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine a specific resonance frequency range and employ a dividing network for canceling out the unwanted intension of sound pressure. As Tanaka et al.

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clearly teaches that a nearly flat frequency characteristic can be obtained (e.g., col 13 lines 63-64), one would have been motivated to choose Tanaka's resonance frequency range and add Tanaka's dividing network to Thompson's bass loudspeaker apparatus.

Claim 2: Thompson and Tanaka et al. disclose a bass loudspeaker apparatus as in Claim 1; but Thompson does not specifically disclose the dimensions of the chamber. However, Tanaka et al. discloses a resonant chamber is between 10 and 40 cm (e.g., cabinet 43, 14 cm in depth, col 15 lines 59-61). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the disclosed range of depth is commonly used. As Thompson further teaches that variations in size and shape of the speaker utilized can be incorporated into the invention, one would have been motivated to apply Tanaka's chamber dimensions to Thompson's bass loudspeaker apparatus.

Claim 3: Thompson and Tanaka et al. disclose a bass loudspeaker apparatus as in Claim 1; and Thompson further discloses that the corn-type woofer is slanted in the cabinet facing the forward direction (see Fig 2).

Claim 4: Thompson and Tanaka et al. disclose a bass loudspeaker apparatus as in Claim 1; and Thompson further discloses that the baffle plate disposed within the inner space of the cabinet includes a plurality of corn-type woofers (speakers 22, col 3 lines 30-35, see Fig 4).

Claim 5: Thompson and Tanaka et al. disclose a bass loudspeaker apparatus as in Claim 1; and Thompson further discloses a Helmholtz resonator (col 1, lines 30-

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35) which can be used as an acoustical material for attenuating unnecessary specific bandwidth.

11. Claim 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (6,062,338) in view of Tanaka et al. (5,781,642), and further in view of Rocha (6,094,495).

Claim 6: Thompson and Tanaka et al. disclose a bass loudspeaker apparatus as in Claim 1, wherein Tanaka's dividing network allows both (col 13 lines 34-39) of the loudspeaker apparatuses to cross over at the range of 150 through 400 Hz (e.g., curve F, Fig. 8); but neither discloses a horn-type midbass loudspeaker apparatus. However, Rocha discloses a horn-type midbass loudspeaker apparatus (horn-type loudspeaker system 100, col 3 lines 50-55) including a horn (horn assembly 106, col 3 lines 50-55); and a cone-type unit (transducer assembly 102 ... cone, col 3 lines 58-62) as a driver (driver cone, col 4 lines 5-10) mounted. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the horn-type loudspeaker is commonly used. As Rocha teaches that a horn receives the acoustical signal radiated the driver, thus increasing the directivity of the overall speaker, one would have been motivated to combine Rocha's horn-type loudspeaker apparatus with Thompson's bass loudspeaker apparatus to build a multiway loudspeaker system.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mae et al. (4,146,111) discloses a speaker system with a inclined


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baffle plate; Furukawa (4,953,655) discloses an acoustic apparatus with crossover range of 150-500 Hz; and Cox et al. (2003/0002702) discloses a thermoset composite material baffle for loudspeaker with a horn and a cone-type driver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Powen Ru whose telephone number is 571-270-1050. The examiner can normally be reached on Monday-Thursday 7:30am-3:30pm EST/EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Myhre can be reached on 571-270-1065. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


PR
9/12/2006


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